APPENDIX C
STATEMENT OF WORK
UXO SUPPORT DURING CONSTRUCTION ACTIVITIES
[PROJECT NAME]
[PROJECT LOCATION (CITY, STATE)]

1.0 GENERAL

1.1 The work required under this Statement of Work (SOW) involves [safety support and avoidance of potential unexploded ordnance (UXO) contamination during performance of construction activities] [subsurface clearance of potential unexploded ordnance (UXO) contamination in support of construction activities] (UXO support) on property currently or previously owned, leased, or otherwise possessed by the United States Department of Defense.

1.2 The Contractor, operating as an independent contractor and not as an agent of the Government, shall provide all labor, materials, and equipment necessary to perform [safety support during] [subsurface clearance in support of] construction activities in accordance with EP 75-1-2, UXO Support During HTRW and Construction Activities. The Contractor shall furnish the required UXO qualified personnel, equipment, instruments, and transportation, as necessary, to accomplish the required services and furnish to the government reports and other data, together with supporting material developed while providing UXO support services. During the implementation of UXO support activities, the Contractor shall provide adequate professional supervision and quality control to ensure the quality, safety, and completeness of the work.

2.0 BACKGROUND

2.1 UXO is a safety hazard that may constitute an imminent and substantial danger to the personnel performing construction activities, other nearby site personnel, and the public in general. UXO contamination must be considered a possibility on all formerly used defense sites (FUDS) and active military installations. The surface danger zone of a range (active or inactive), the target area, impact area, ricochet area and the secondary danger zones may be contaminated with UXO. UXO may be found on the surface and/or subsurface. The varying types of ammunition, angle of fire, and soil types preclude the accurate estimation of the depth of any subsurface UXO.

2.2 Location of Work.

[Insert general and specific descriptions of project location]

2.3 Site History.

[Insert history of site utilization with special emphasis on types of ordnance items that may be encountered]

2.4 Chemical Warfare Materiel. During a comprehensive review of archival records, [no evidence] [evidence] of the potential existence of chemical warfare materiel (CWM) or CWM byproducts on [Site Location] was discovered. In the event suspect CWM is encountered, all work will immediately cease and project personnel will be evacuated along cleared paths upwind from the discovery. A team consisting of a minimum of two personnel shall immediately secure the area to prevent unauthorized access. Reporting procedures will be in accordance with paragraph 6.4.

3.0 REGULATORY AND TECHNICAL REQUIREMENTS

3.1 UXO support activities shall be conducted in full compliance with United States Army Corps of Engineers (USACE), Department of Army (DA), and Department of Defense (DOD) requirements regarding personnel, equipment, and procedures. (All UXO operations shall emphasize anomaly avoidance, whenever possible, and be performed in a manner consistent with the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] and the National Contingency Plan [NCP]. Therefore, the administrative requirements of Federal, state, or local permits are not required for implementation of any UXO procedures, including on-site destruction of UXO, if required, but the substantive permit requirements must be fulfilled.)

3.2 The provisions of 29 CFR 1910.120 shall apply to all UXO-related actions taken at this site. In addition, UXO personnel involved in performing UXO tasks will be limited to a 10-hour workday and a 40-hour workweek. Two consecutive workweeks shall be separated by a minimum of 48 hours of rest.

4.0 SPECIFIC REQUIREMENTS

4.1 UXO support during construction activities may require only UXO safety support or a complete UXO subsurface clearance response, depending on an assessment of the probability of encountering UXO and the level of confidence associated with the determination. If the probability of encountering UXO is low (e.g., current or previous land use leads to an initial determination that UXO may be present), only UXO safety support will be required. When a determination is made that the probability of encountering UXO is moderate to high (e.g., current or previous land use leads to a determination that OE was employed or disposed of in the area of concern), UXO qualified personnel must conduct a subsurface clearance of the known construction footprint and remove all discovered UXO. The level of effort for construction

support is site/task-specific and will be determined on a case-by-case basis by the project team in coordination with the OE Mandatory Center of Expertise (MCX).

4.2 The work elements to be performed under this [contract] [delivery order] are listed below.

[Use only those paragraphs listed below that are applicable to the specific task]

4.3 Site Visit/Records Review. The Contractor shall conduct a site visit, review pertinent records, and interview personnel knowledgeable of site conditions to collect sufficient information to develop a Work Plan and a Site Safety and Health Plan (SSHP) for the planned activities. This task is not intended to be an expanded archival search where new information is located or developed. Prior to conducting a site visit, an Abbreviated Site Safety and Health Plan (ASSHP) must be prepared and submitted to the Contracting Officer for review and approval. Site visit personnel must be accompanied by a UXO qualified technician (UXO Technician II) in areas potentially contaminated with UXO. The Contractor shall ensure that the site visit is fully coordinated and that all members of the site visit team comply with the accepted ASSHP.

4.4 Work Plan/Site Safety and Health Plan. The Contractor may not commence construction activities on sites with known or potential UXO until a site-specific Work Plan describing proposed UXO support procedures and the equipment to be used is prepared and accepted by the Contracting Officer. The Work Plan shall also include a SSHP specifically addressing UXO considerations. The Work Plan should discuss UXO team composition in accordance with EP 75-1-2. The Work Plan and SSHP shall promote safe and efficient operations while limiting potential exposure to a minimum number of personnel for a minimum time and to the minimum amount of UXO. Construction activities shall only be accomplished following UXO support procedures defined in the accepted Work Plan.

4.4.1 Explosives Siting Plan (If Required). An Explosives Siting Plan (ESP) is required for UXO support during construction activities. The ESP discusses the proposed minimum separation distances for unintentional detonations, intentional detonations, and siting of critical project components. The ESP should describe the basis of design, all design calculations, and proposed hazard mitigation measures to be implemented to protect the public, non-project personnel, and site workers from explosive hazards. The ESP will be reviewed by the project team to ensure that the appropriate minimum separation distance criteria have been applied.

4.4.2 Explosives Safety Submission. Construction activities involving the removal and disposition of UXO may require submittal and approval of an Explosives Safety Submission (ESS). The requirement for an ESS will be determined on a case-by-case basis by the project team in consultation with the OE MCX. The purpose of the ESS is to ensure that all applicable DOD and Army regulations regarding safe and secure handling of ordnance are followed.

Detailed information on the content, review and approval procedures, and modification process for the ESS is available in EP 1110-1-18, OE Response.

4.4.2.1 UXO removal operations may not begin on construction projects requiring an ESS until the ESS is approved by the U.S. Army Technical Center for Explosives Safety (USATCES) or the Department of Defense Explosives Safety Board (DDESB) and the contractor has been directed to incorporate the accepted ESS into the Work Plan. A copy of the accepted ESS will be maintained at the project site. All operations will be executed in accordance with the accepted ESS.

4.4.2.2 When an element of the accepted ESS changes, it must be amended. The contractor will prepare the proposed change and forward it to the Project Manager (PM), who will forward it to the OE MCX for review. The OE MCX will forward the proposed changes to the appropriate agency for approval. For a change that specifies less restrictive requirements (e.g., reduction in exclusion zone), the contractor will comply with the accepted ESS until the change is approved. When changes would be more restrictive (e.g., increase in exclusion zone), the contractor will immediately implement the more restrictive measures.

4.5 Safety Support. If the probability of encountering UXO is low (e.g., current or previous land use leads to an initial determination that UXO may be present), only UXO safety support will be required.

4.5.1 A UXO team consisting of a minimum of two qualified UXO personnel (one UXO Technician III and one UXO Technician II) shall be used to provide safety support during construction activities in areas potentially contaminated with UXO. The UXO team should review any archival information available regarding the area of the proposed construction activities. If possible, the UXO team should determine the probable types of UXO that may be encountered and specific safety considerations. The UXO team should meet with on-site management and construction personnel and conduct a general work and safety briefing prior to commencement of any on-site activities.

4.5.2 The UXO team should physically preview the actual construction footprint with the on-site management of the construction contractor and discuss visual observations and potential areas of concern. In the event UXO is discovered, the UXO team shall place flagging adjacent to the discovery for subsequent visual reference, select a course around the item, and lead project personnel out of the area.

4.5.3 The UXO team should monitor all excavation activities in areas potentially contaminated with UXO. One member of the team should be positioned to the rear and upwind of the excavation equipment for continuous visual observation of activities. If the construction contractor unearths or otherwise encounters suspect UXO, all excavation activities will cease. The UXO team will assess the condition of the UXO to determine if disposal action is required.

Once UXO has been encountered in an excavation, no further excavation is allowed at that location until EOD has removed the UXO item. Once the item is removed, excavation may continue.

4.5.4 UXO/OE Disposition. The UXO team is generally not tasked to perform UXO/OE disposition during safety support of construction activities. In the event that ordnance is encountered that cannot be avoided or, based on its fuzing or current condition, presents an imminent hazard requiring immediate attention, the UXO team will notify the local POC designated in the Work Plan. The UXO team will not destroy any of the UXO encountered. The local POC will notify the appropriate authority of the UXO discovery and the UXO team will safeguard the site pending arrival of the appropriate authority.

4.5.4.1 On active installations, UXO disposition requests will normally require reporting to the Range Control Officer, Facility Engineer, Post Headquarters or POC designated in the Work Plan.

4.5.4.2 On FUDS, the local POC will facilitate EOD response. If the local POC designated in the Work Plan is not the local law enforcement agency, the local POC will inform the local law enforcement agency of the discovery. The local POC will also contact the USAESCH Safety Manager.

4.6 Subsurface Clearance in Support of Construction Activities. A subsurface clearance of the identified construction footprint is required when the probability of encountering UXO during construction-related excavation activities is moderate to high (e.g., current or previous land use leads to a determination that OE was employed or disposed of in the area of concern). The subsurface clearance process requires close coordination among on-site management personnel of the USACE, construction contractor, and UXO contractor. The UXO team should physically preview the actual construction footprint with other on-site management personnel and discuss visual observations and potential areas of concern. Subsurface clearance actions must be accomplished in strict accordance with the accepted Work Plan, SSHP, ESP, and ESS (if required).

4.6.1 The UXO team should be familiar with these plans and should review any archival information available regarding the area of the proposed construction activities. If possible, the UXO team should determine the probable types of UXO that may be encountered and specific safety considerations. Prior to commencing subsurface clearance activities, the UXO team should provide a general work and safety briefing to all on-site personnel.

4.6.2 Underground Utilities. Utility clearance and/or excavation permits, if required, must be obtained prior to the commencement of any intrusive activities. The UXO team is responsible for verifying that all necessary excavation permits are on-site prior to commencing operations. The prime contractor is responsible for contacting the appropriate agency(ies) or company(ies) to

mark the location of all subsurface utilities in the construction area. In the event subsurface utilities are suspected in an excavation area, the UXO team must attempt to verify their location. All located utilities should be marked by paint, pin flags, or other appropriate means to visually delineate their approximate subsurface routing.

4.6.3 Area Preparation. Area preparation includes reduction and/or removal of vegetation that may impede or limit the effectiveness of subsurface clearance actions. Vegetation reduction/removal may be accomplished through manual removal, mechanical removal, controlled burning, or defoliation. Selection of the appropriate land clearing strategy should be based on the type and concentration of vegetation, topography, drainage patterns, terrain and soil conditions, and the level of required environmental and natural resource protection.

4.6.3.1 Area preparation is not considered a UXO clearance procedure; anomaly avoidance procedures should be followed. The area preparation teams working in areas not previously surveyed for the presence and avoidance of UXO must be accompanied by UXO qualified personnel following procedures described in EP 75-1-2.

4.6.4 Surface Clearance. A surface clearance may be required to remove any existing UXO from the surface of the work area. The disposition of recovered UXO is discussed in paragraph 4.6.7. In addition, all UXO-related remnants, target materials, and non-UXO related materials which may interfere with a subsurface geophysical survey should be removed from the surface of the work area and staged for later disposition. UXO teams must complete all surface clearance activities.

4.6.5 Geophysical Mapping/Analysis. A subsurface geophysical survey shall be conducted to identify and locate all anomalies. The various types of geophysical detection equipment are presented in EP 75-1-2. Subsurface geophysical surveys may be completed using detection instrumentation with real time or post-processing identification and discrimination techniques.

4.6.5.1 Subsurface geophysical surveys are not considered a UXO clearance procedure; anomaly avoidance procedures should be followed. The geophysical mapping teams working in areas not previously surveyed for the presence and avoidance of UXO must be accompanied by UXO qualified personnel following procedures described in EP 75-1-2. All anomalies should be prominently marked with survey flagging or pin flags for subsequent intrusive investigation.

4.6.6 Anomaly Excavation. Anomaly excavation operations are required to intrusively investigate and identify the source of all anomalies located during completion of the subsurface geophysical survey. During excavation operations, only those personnel absolutely necessary for the operation shall be within the exclusion zone. All anomaly excavation operations shall comply with the provisions of 29 CFR 1926 subpart P.

4.6.6.1 Normally, UXO qualified personnel will manually complete anomaly excavations of less than one foot. If an anomaly is deeper than one foot, earth-moving machinery (EMM) should be used to assist in excavation efforts unless site constraints or accessibility restrict or prohibit use. EMM shall not be used to excavate within 12 inches of an anomaly. When an anomaly excavation gets within approximately 12 inches of an anomaly, the excavation must be completed manually.

4.6.6.2 Only UXO qualified members of a UXO team may conduct manual excavation operations. A non-UXO qualified member of the UXO team may operate EMM used to assist in anomaly excavations. If more than one EMM will be used within the same work area, the team separation distances required for multiple teams as described in EP 75-1-2 must be used.

4.6.6.3 After the probable source of the anomaly is identified and removed, an approved geophysical instrument should be used to validate the process. If the geophysical instrument does not continue to detect an anomaly, then the excavation may be back-filled and restored in accordance with contract requirements.

4.6.7 UXO Destruction. The Work Plan shall include procedures for destruction of UXO recovered during construction activities. Destruction of UXO can be accomplished at one of three locations: in-place, on-site, or off-site. The decision regarding which technique to use is based on the risk involved in employing the disposal operation as determined by site-specific characteristics and the nature of the UXO recovered. Additional information on UXO disposal operations can be found in TM60A-1-1-31, Explosive Ordnance Disposal Procedures.

4.6.7.1 In-place. As a general rule, in-place demolition (blow-in-place) is the preferred technique unless site conditions warrant transport of safe-to-move UXO to an alternate location. Information on recommended destruction procedures for individual UXO items can be found in TM 60A-1-1-31, Explosive Ordnance Disposal Procedures. All detonation-in-place operations shall be conducted by electrical means to ensure maximum control of the site, except in situations where static electricity or electromagnetic radiation (EMR) hazards are present. Non-electrical means may be used when the situation dictates.

4.6.7.2 Off-Site Transport. UXO that has been certified as safe-to-ship in accordance with TB 700-2, DOD Ammunition and Explosives Hazard Classification Procedures, may be transported to an off-site UXO destruction location.

4.6.7.2.1 A Transportation Plan detailing the route and procedures to be used during the transportation of the UXO must be prepared and accepted prior to engaging in any transport activities to ensure all safety aspects of the movement have been addressed. The transport of UXO off-site must be performed in accordance with the provisions of 49 CFR Part 172, DOD 4500.9-R Part 2, and applicable state and local laws. Contractor personnel who, by contract requirement, are tasked with the responsibility of transporting or preparing shipments of OE over

public roads, must meet all training requirements of 49 CFR Part 172 and applicable state requirements.

4.6.7.3 Manifest. A Hazardous Waste Manifest (EPA Form 8700-22) is required when transporting OE over public roads in non-emergency situations. In emergency situations, military EOD will respond. For informational guidance on the Hazardous Waste Manifest, refer to 49 CFR 172.205 and 40 CFR 262.20. For the purposes of transportation and storage, OE will be hazard classified in accordance with TB 700-2, DOD Ammunition and Explosives Hazard Classification Procedures. Government personnel who are tasked to sign shipping papers (including the Hazardous Waste Manifest, if required), must be trained and given signature authority by their agency, in accordance with the requirements of DOD 4500.9-R, Defense Transportation Regulation, Part II, Cargo Movement.

4.6.7.4 Explosives Management. Explosives used for the destruction of UXO must be acquired and managed in accordance with EP 75-1-2 and applicable federal, state, and local laws and regulations including, but not limited to, the following:

- Bureau of Alcohol, Tobacco, and Firearms Publication (ATF P) 5400.7, Alcohol, Tobacco, and Firearms Explosives Laws and Regulations, and 27 CFR.
- DOD 6055.9-STD.
- 49 CFR.
- 29 CFR 1910 and 1926.

4.6.7.5 Debris/Remnant Management. The Work Plan must include operational and quality control procedures for the processing, demilitarization, and disposition of inert ordnance, target materials, and UXO-related remnants which fall within the classification of Ammunition, Explosives, and Dangerous Articles (AEDA). Contact the OE MCX for requirements of AEDA processing and disposition.

4.7 Quality Control.

4.7.1 The UXO contractor is responsible for the quality control of all surface and subsurface clearance activities and for ensuring that only those procedures and processes conforming to contractual requirements and accepted project plans are implemented. The UXO contractor shall develop a Quality Control Plan (QCP) outlining the quality activities to be used for continually assessing the implementation, effectiveness, compliance, and adequacy of operations.

4.7.2 A separate UXO Quality Control Specialist is not required on-site full-time for UXO support activities. However, the UXO support contractor must perform quality control reviews of all field activities in accordance with the accepted QCP.

5.0 SUBMITTAL REQUIREMENTS

5.1 Format and Content. All plans and reports shall be typewritten on standard size white paper. A front cover sheet shall be provided which includes the contractor's name and address, contract number, [delivery order number], name of the project, date of the plan, and title of the plan.

5.1.1 Chapters shall be numbered sequentially. Within each chapter, a decimal paragraphing system shall be used with each paragraph numbered sequentially, starting with the specific chapter number. Within each chapter any figures, tables, and charts shall be numbered sequentially starting with the chapter number. Appendices shall be lettered alphabetically. Within each appendix, each page shall be numbered sequentially starting with the appendix letter. Drawings larger than 8.5 inches by 11 inches shall be folded to this size.

5.1.2 Every page of the plan shall be numbered sequentially starting with the specific chapter number and contain a footer containing the plan date, [and contract number.] [contract number, and delivery order number.] When revisions to the plan are required, a revision date and amendment number shall be included in the footer.

5.2 Schedule. The Contractor shall prepare and submit a project schedule of planned activities including plan preparation, submittal, and review; field operations; and reporting. The schedule should identify all critical-path milestones.

5.3 Addressees and Quantities. The following addresses and number of required copies shall be used for all submittals:

ADDRESSEE	QUANTITY
[To Be Completed]	[xx]

6.0 REPORTS

6.1 Minutes of Meetings. The Contractor shall prepare minutes of all meetings attended and submit them to the Contracting Officer within seven calendar days after the meeting.

6.2 Correspondence. The Contractor shall keep a record of each phone conversation and written correspondence affecting decisions relating to the performance of this [contract] [delivery order]. A summary of the phone conversations and written correspondence shall be submitted monthly to the Contracting Officer.

6.3 After Action Report. Upon completion of the UXO activities, the Contractor must prepare an After Action Report describing the activities completed, significant findings, and lessons

learned that may assist development of future project plans. The After Action Report shall be submitted to the district PM with a copy forwarded to the OE MCX.

6.4 Report of Suspect CWM. If suspect CWM is encountered, the following procedures will be followed. All work will immediately cease. Project personnel will withdraw along cleared paths upwind from the discovery. A team consisting of a minimum of two personnel will secure the area to prevent unauthorized access. Personnel should position themselves as far upwind as possible while still maintaining security of the area.

6.4.1 On FUDS project sites, the UXO team will notify the local POC designated in the Work Plan. The local POC will facilitate EOD response and two personnel will secure the site until EOD's arrival. If the local POC designated in the Work Plan is not the local law enforcement agency, the local POC will inform the local law enforcement agency of the discovery. The EOD unit will notify the Technical Escort Unit (TEU) and secure the area until TEU's arrival. After notifying the local law enforcement agencies, the local POC will notify the USAESCH Safety Office to inform them of the actions taken.

6.4.2 On active installations, the UXO team will normally notify the Range Control Officer, Facility Engineer, Post Headquarters or POC designated in the Work Plan.

6.4.3 The UXO team will prepare a Report of Suspect CWM for the designated POC.

6.5 Mishap Reporting. All mishaps associated with execution of project activities shall be investigated and analyzed. Information reflected on the report forms are the basis to investigate the accident, analyze the cause, and identify what corrective actions may be implemented to prevent similar occurrences.

6.5.1 All mishaps will be reported in accordance with AR 385-40 Accident Reporting and Records; USACE Supplement, Safety-Accident Reporting and Records, and EM 385-1-1, Safety and Health Requirements Manual. Any mishap will be reported on ENG FORM 3394, Accident Investigation Report.

6.5.2 On FUDS, the Contractor's UXO Safety Officer is responsible for mishap reporting. For contracts under the supervision of the district, mishaps will be reported to the district safety office. An information copy of the accident report will be forwarded to the OE MCX. USACE district personnel will report through Command channels to the Headquarters, USACE (HQUSACE) Safety and Occupational Health Office.

6.5.3 On active installations, the installation safety officer is responsible for reporting any explosives mishaps.

6.5.4 Incidents involving CWM will be reported in accordance with USACE Supplement to AR 385-40. A site-specific POC will be identified and documented in accordance with the reporting requirements in paragraph 6.5.1.

6.6 Investigations. The U.S. Army Safety Center (USASC) maintains the prerogative to investigate Class A or Class B explosive mishaps (as defined in AR 385-40) on active installations. If USASC chooses to investigate, it is the lead agency. If USASC chooses not to investigate, the district is the lead agency.

7.0 PUBLIC AFFAIRS

7.1 The Contractor shall not publicly disclose any data generated or reviewed under this [contract] [delivery order]. The contractor shall refer all requests for information concerning site conditions to the local USACE district Public Affairs Office, with a copy to USAESCH. Reports and data generated under this [contract] [delivery order] are the property of the DOD and distribution to any other source by the Contractor is prohibited unless authorized by the Contracting Officer.